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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,133	11/14/2003	Tsuyoshi Ohyama	09792909-5730	3928

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EXAMINER	
SCHECHTER, ANDREW M	

ART UNIT	PAPER NUMBER
2871	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/714,133	OHYAMA ET AL.	
	Examiner	Art Unit	
	ANDREW SCHECHTER	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-10,18-20 and 23-45* is/are pending in the application.

4a) Of the above claim(s) *8-10 and 23-45* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 23 March 2009 have been fully considered but they are not persuasive. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

The previous double patenting rejection over claim 13 of copending Application No. 11/277,461 has been withdrawn due to the amendment of that copending claim to eliminate the recitation of patterning the retardation film so that it remains only in the reflective area. The recited methods of the copending claim 13 and the present claims are now sufficiently distinct to no longer warrant a double patenting rejection.

The applicant argues that the *Roosendaal* discloses forming another optical foil on a second substrate, and argues that the present claims exclude this possibility. Neither of these arguments is persuasive to the examiner. First, as explicitly pointed out by the examiner in the office action of 23 December 2008, the claim language does not actually require that the method forms no other retardation films than the one recited as “a retardation film”, it merely requires that this particular retardation film be formed on “only” one of the substrates [that is, there could be other retardation films elsewhere, while still being within the scope of the claim]. Since the applicant apparently believes that this is the point of novelty, a negative limitation that there are no other retardation films in the liquid crystal display device (or something similar) would seem appropriate to clarify this difference. Second, even if the claim language were more carefully

chosen to exclude any other retardation films in the device, the applicant's argument would still appear to be unpersuasive, since *Roosendaal* refers to the additional back optical foil 16b as "optional" [at col. 3, lines 51-52]. Thus, *Roosendaal* does not require another optical foil as argued. Does the applicant believe that *Roosendaal's* device would be non-functional without the additional back optical foil? If so, the examiner would appreciate an explanation for why this would be the case.

The applicant argues that having only a single retardation film produces unexpected results, that the liquid crystal thickness can be adjusted without adding an additional layer. This is not persuasive. First, for the reasons given above this does appear commensurate with the claimed invention (which is not necessarily limited to a single retardation film). Second, sufficient evidence of such unexpected results has not yet been provided to demonstrate that this outweighs the grounds of obviousness presented in the rejections.

The previous rejections are therefore maintained, modified as necessary by the amendments to the claims.

Claim Objections

2. Claim 18 is objected to because of the following informalities: “the alignment” in line 5 should be “the alignment film”. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Roosendaal et al.,* U.S. Patent No. 6,731,360 in view of *Kim,* U.S. Patent No. 6,570,634.

Roosendaal discloses [see Fig. 1, for instance] a method of manufacturing a liquid crystal display which has a pair of substrates [inherent] and a liquid crystal layer [12] interposed between the substrates and which has a reflective area [on left] and a transmissive area [on right], the method comprising the steps of forming a retardation film [16a] on only one of the substrates [note that there could be other retardation films elsewhere], and patterning the retardation film such that the retardation film remains only in the reflective area [col. 5, lines 22-26, etc.]. *Roosendaal* does not (perhaps) explicitly disclose the steps of forming an alignment film on one of the substrates and forming the retardation film on the alignment film.

However, *Roosendaal* does disclose manufacturing the patterned quarterwave foil by photo-polymerization of a reactive liquid crystal material, and states that "[these] materials get their orientation from thin polymer alignment films; similar to those used to orientate a liquid crystal layer" [col. 6, lines 4-8]. It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to form an alignment layer

between the substrate and the retardation film in *Roosendaal*, motivated by *Roosendaal's* teaching that this is the means by which the retardation film gets its orientation.

Roosendaal does not appear to disclose that the liquid crystal layer has a phase difference of $\lambda/4$ in the reflective area and $\lambda/2$ in the transmissive area when no voltage is applied or when a voltage is applied. The liquid crystal phase differences are apparently the same in the two areas, in part due to the cell gap being the same in the two areas.

Kim discloses an analogous device with different cell gaps in the reflective and transmissive areas [compare Figs. 3 and 6], such that the liquid crystal has a phase difference of $\lambda/4$ in the reflective area and $\lambda/2$ in the transmissive area in a voltage on or voltage off state [col. 8, lines 6-8]. It would have been obvious to one of ordinary skill in the art at the time of the invention to use such an arrangement in the above device, motivated by *Kim's* teaching that this arrangement provides for higher luminance in the transmissive mode [col. 5, lines 21-23 and see discussion of Fig. 7].

Claim 18 is therefore unpatentable.

The retardation film is composed of a liquid crystal polymer [col. 6, lines 4-8], so claim 19 is also unpatentable.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Roosendaal et al.,* U.S. Patent No. 6,731,360 in view of *Kim,* U.S. Patent No. 6,570,634 as applied above, and further in view of *Kubota et al.,* U.S. Patent No. 6,771,334 and *Kitagawa et al.,* U.S. Patent No. 6,404,469.

Roosendaal does not disclose that the liquid crystal polymer is obtained by curing an ultraviolet-curable liquid crystal monomer in a nematic phase. *Kubota* discloses an analogous device and teaches that the retardation film with differing regions can be obtained by curing a "UV crosslinking liquid crystal polymer" [col. 10, lines 34-40]. *Kubota* is silent on the nematic phase limitation; *Kitagawa* discloses such a compensator in a nematic phase [col. 3, lines 6-17]. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the retardation layer a liquid crystal polymer of such a composition (UV curable material) in a nematic phase, motivated by *Kitagawa's* teaching that the production process for such sheets is known and they are commercially available (reducing uncertainties and experimentation in manufacturing), and *Kubota's* and *Kitagawa's* teaching that they allow control of optical characteristics including retardation. Claim 20 is therefore unpatentable.

Election/Restrictions

6. Claims 8-10 and 23-45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 4 August 2005.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew Schechter/
Primary Examiner, Art Unit 2871
Technology Center 2800
6 July 2009